

# CATALOGUE

OF

THE MUSEUM

ATTACHED TO THE

CLASS OF MILITARY SURGERY

IN THE


University of Edinburgh.

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The preparation of a Catalogue of the articles in the Museum, was proposed as a prize essay to the Students of the Class of Military Surgery during the present Session. Three gentlemen, Messrs Murray, Cahill, and Pelan, entered upon the competition, but the latter was, from the state of his health, unfortunately compelled to relinquish the task. This Catalogue is therefore to be considered as the joint production of Mr John Ivor Murray, and Mr Alexander Peile Cahill, to the former of whom the first prize was assigned.

The collection consists of two parts. First, The preparations made by Mr Rutherford Alcock, during the service of the "British Legion of Spain," and of which very full descriptions, with valuable details of the cases, are contained in the Manuscript Catalogue and Appendix referred to. These preparations are destined, by the terms upon which they were made over to the Uni-

versity, to be kept up as a separate collection, and they will be at once recognised by the letter A, attached to each of them. The numbers, however, will not be found to run in a regular series, some deviation having been made from the arrangement ~~made~~ in "Mr Alcock's Catalogue Raisonné," and the whole of the preparations classed simply as illustrative of Injuries of the Head, Trunk, and Extremities,—this classification being, upon the whole, best suited to the order of the Lectures. The second part consists of preparations, models, casts, and drawings, collected by the present Professor, marked by the letter B, and for many of which it will be seen that he is indebted to his friends in the public service.

In printing this Catalogue two principal objects have been held in view,—to extend the utility of the collection to the Students,—and to point out to the old Pupils of the Class, or to others who may be kind enough to make contributions, the departments in which the collection is still deficient. The principal desiderata are Pathological specimens, illustrative of the diseases of tropical climates; Preparations illustrating the injuries of blood-vessels, nerves, and vital organs; Plans of military and naval hospitals, whether remarkable for their advantages or defects; Plans of barracks, trans-

ports, and hospital ships; Models of all kinds of contrivances for the comfort and conveyance of sick and wounded soldiers; Specimens of missiles and warlike weapons employed by foreign nations, with whom our troops may have been engaged.

GEO. BALLINGALL.

EDINBURGH COLLEGE, March 20, 1844.



# CONTENTS.

	Page.
INJURIES OF THE HEAD AND FACE, CHIEFLY FROM GUNSHOT,	1
INJURIES OF THE SPINE,	6
INJURIES OF THE RIBS,	7
INJURIES OF THE PELVIS,	ib.
INJURIES OF THE SUP. EXTREMITY.	<div> <div>{</div> <div> Gunshot Fracture of the Clavicle, 8  ———— of the Scapula, ib.  ———— of the Humerus, 9  ———— of the Radius, ib.  Injuries of the Joints, 10 </div> </div>
INJURIES OF THE INF. EXTREMITY.	<div> <div>{</div> <div> Gunshot Fracture of the Femur, 11  ———— of the Tibia and Fibula, 14  ———— of the Patella, 16  Injuries of the Joints, ib. </div> </div>
EFFECTS OF AMPUTATION ON BONES SAWN ACROSS,	21
EXFOLIATIONS, FRAGMENTS, EXOSTOSES, &C.	23
INJURIES OF THE BRAIN AND NERVES,	25
INJURIES OF THE THORACIC AND ABDOMINAL VISCERA,	26
INJURIES OF THE BLOOD-VESSELS,	27
WORMS,	28
CASTS,	29
BALLS, MISSILES, &C.	30
INSTRUMENTS, APPARATUS, MODELS, &C.	33
DRAWINGS, PLANS, &C.	36





*From the great desire to have this Catalogue in the hands of the Students, so as to enable them to avail themselves of it before the close of the Session, and from the little time that the Professor could command to superintend its progress through the press, it is feared that several errors may have escaped notice. The following it is believed are the most important.*

Preface, page iv. line 5th, *for* "arrangement made in" *read* "arrangement in."

Page 2. A. 7. *for* "squamous portion of the temporal" *read* "parietal," and delete the word "without."

Page 3. A. 10. *for* "*M.S. Cat. page 4.*" *read* "*M.S. Cat. page 8.*"

Page 10. Running title, *for* "inferior" *read* "superior." A. 42. *for* "shirt" *read* "coat."

Page 15. A. 53. *for* "tibia" *read* "humerus." The whole of this description should be transferred to page 9.

Page 17. A. 25. *for* "condyle," *read* "articular surface."

Page 23. A. 89. *for* "trochanter minor," *read* "trochanter major."

Page 26. A. 100. *for* "pyrogenic," *read* "pyogenic."

Page 29. line first, *for* "B. 25." *read* "B. 24."



## CATALOGUE, &c.

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B. 1. An articulated skeleton on a stand, used for occasional reference in the class-room.

B. 2. Skeleton of a man, HOWISON, who was hanged for murdering a woman at Cramond; remarkable as being the skeleton of the last body given to the Surgeons for dissection, under the old law.

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### INJURIES OF THE HEAD AND FACE.

A. 1. Part of the parietal bone and dura mater of a patient who died forty-six days after being struck on the head by a musket ball. Slight fracture and projection inwards of the inner table, with separation of the dura mater and deposition in the centre. Beyond this a still larger circle of diseased structure of the dura mater may be traced, of a dark velvety and mottled appearance. The diaphanous state of the bone around the seat of injury gives evidence of the action of the absorbents.—FLYNN æt. 45. *M.S. Catalogue, page 2. Appendix, page 2.*

A. 2. Part of the parietal bone, dura mater, and brain of a patient who was struck by a musket ball, un-

derwent the operation of trephining, and died on the 13th day. The ball, A. No. 119, was found firmly dovetailed in the bone, partially split, and jagged. Several depressed portions of bone were taken away; the dura mater seemed uninjured. The preparation shows a fungus cerebri, ulceration of the substance of the brain, a diseased state of the pericranium, and disease of the bone.—Wise æt. 32. *M.S. Catalogue, page 4. Appendix, page 4.*

A. 3. Portions of dura mater from the same patient, showing ulceration over the longitudinal sinus.

A. 4. Portion of the dura mater. The pericranium, was separated about an inch round the perforation formed by a ball, and a fungoid diseased growth of the dura mater had become adherent to the fractured and trephined edges of the bone. Died 23d day.—CLEARY æt. 20. *M.S. Catalogue, page 4. Appendix, page 18.*

A. 5. Fungoid growth of the dura mater supervening on gun-shot injury. Died 23d day.—WALMSLEY, æt. 47. *M.S. Catalogue, page 4. Appendix, page 14.*

A. 6. Gun-shot fracture of the frontal bone, marked by an irregular foramen.—O'HARA. *M.S. Catalogue, page 11.*

A. 7. Portion of the skull showing the passage of a ball through the squamous portion of the temporal bone, without fissuring it. Died 3d day.—CANTWELL. *M.S. Catalogue, page 11. Appendix, page 22.*

A. 8. Part of the skull from the patient who furnished preparation No. 4. The ball struck the left parietal bone, causing a compound fracture with depression. The trephine was applied on the seventh day and the depressed portions removed, but the patient died tetanic on the 23d day after receipt of the injury.—CLEARY, æt. 20. *M.S. Catalogue, page 11. Appendix, page 18.*

A. 9. Part of the left parietal bone from the patient who furnished No. 5. The ball caused a compound fracture

across one of the branches of the middle meningeal artery, and the trephine was applied on the 2d day. The absorbent action on the bone is marked by an irregular circle extending across the coronal suture; died on the 23d day.—WALMSLEY, æt. 47. *M.S. Catalogue, page 9. Appendix, page 14.*

A. 10. Portion of the skull of the patient who furnished preparation No. 108, showing the absorbent action around the wound. Although the ball passed directly through that portion of the bone along which the meningeal artery runs, there was no extravasation of blood. Died 27th day.—COLE, æt. 30. *M.S. Catalogue, page 4. Appendix, page 12.*

A. 11. Skull of a Chapelchurri picked up in the trenches at the foot of the Orcamendi hill. The ball entered through the parietal bone close to the coronal suture, and passing obliquely down, traversed the whole substance of the brain, emerging from the skull at the foramen lacerum medium, carrying away the extremity of the petrous portion of the temporal, and a portion of the lesser wing of the sphenoid bone. The former is likewise splintered perpendicularly through its squamous portion. Immediate death.—*M.S. Catalogue, page 13.*

A. 12. The anterior portion of a skull, showing the course of a large fragment of a shell A. No. 109, through the bones of the face, in its way obliquely downwards from the orbit to the opposite side of the neck. Died 4th day.—*M.S. Catalogue, page 14.*

A. 13. Gun-shot comminuted fracture by a ball which entered over the left eye-brow, where portions of the bone are to a certain extent carried inwards, and on a lower level than the surrounding parts; passing transversely across the forehead, it emerged over the centre of the right eye-brow. Died 5th day.—APPOIN. *M.S. Catalogue, page 15. Appendix, page 24.*



B. 3. This skull presents a large aperture on the right side of the occipital bone, immediately behind the foramen magnum; the wound is nearly circular, and at a hasty glance might be supposed the result of a musket ball, but on the external and right side of this wound may be distinguished a portion of the surface evidently cut with a sharp sabre.

B. 4. This skull presents three sabre wounds on the back part of the head. The most severe of these is at the junction of the sagittal and lambdoidal sutures, about three inches in extent; it penetrates through both tables of the skull, fissuring the inner. The second wound in point of size extends across the lambdoidal suture near the junction of this with the squamous; the outer table of the skull is here removed to the extent of about one inch and a half, by three quarters of an inch, the sabre not penetrating through the inner table. The third wound consists of a slight superficial cut on the parietal bone.

B. 5. This preparation presents five sabre cuts on the back of the head; two of these are very severe. The first is about two and a half inches in extent, penetrating through both tables of the skull, the inner of which is much splintered. This wound is on the left parietal bone, and from its anterior extremity a fissure extends to the frontal suture. The second cut is situated in the right parietal bone, and is about two inches in length; it extends through the outer table of the skull into the diploe, and has removed a large portion of the former. The three other wounds are comparatively trivial.

These three preparations, B. 3, 4, 5, are the skulls of patriot Greeks, who fell in the actions between the Turkish and Greek forces, under General Church, in 1827. They were brought from the plain between the Piræus and city of

Athens, and *presented by Dr M<sup>c</sup>William, of the Royal Navy, author of the Medical History of the Niger Expedition.*

B. 6. Skull showing extensive ulceration of the frontal bone, from a gun-shot wound received at Waterloo, which the patient survived for many years. Some parts both of the frontal and the parietal bones are thickened to more than half an inch. Both tables of the skull had been involved in the ulcerative process, and an irregular opening is left of nearly six inches in circumference, the margins of which have been rounded off. The nasal portions of the frontal bone, as well as the nasal bones, and nasal processes of the superior maxillary bones, present a carious appearance. The ethmoid, lacrymal, and other small bones, are quite destroyed. As most of the teeth of the upper, and the whole of those of the lower jaw, are wanting, and the alveolar processes absorbed, it is seen that the subject of this extensive disease, a field officer in the army, must have lived to an advanced age.

B. 7. A skull presenting an extensive comminuted fracture of the frontal and upper part of the right parietal bones, with some of the fragments removed by operation. The breach is partly filled up by bony substance, and the edges rounded off. Part of the fractured parietal bone, and a triangular portion of the frontal bone, which seems to have been partially detached and depressed below the level of the surrounding parts, are firmly re-united. The patient, a workman in Portsmouth dockyard, had evidently survived the injury for a length of time, but the circumstances of his death are not known.—GROVE. *Presented by John Burns, Esq. Surgeon, Royal Navy.*

## INJURIES OF THE SPINE.

A. 14. Second and third cervical vertebræ of a man who received a musket-shot in the mouth, returned to his regiment and did duty from the 15th to the 38th day after he was wounded. Difficulty of swallowing, pain and stiffness of neck, slight obstruction to the respiration, and inability to protrude the tongue, then obliged him to return to Hospital, where he died 25 days thereafter. The preparation shows that a portion of the bony canal in the dentata is destroyed; the body of the 3d vertebra is broken away and absorbed, a leaf-work of callus being thrown out: further deposition of callus may be traced over the whole of the anterior surface of the bodies, and the transverse processes of the two vertebræ.—BARROWCLIFFE. *M.S. Catalogue*, page 26. *Appendix*, page 28.

A. 15. Last dorsal vertebra of a man in whom a musket-ball entered about three inches to the side of the spinous processes, entering the chest at the angle of the eleventh rib, fracturing it between its neck and angle, and lodged in the vertebra. The inner plate of the body of the bone was found to have been irregularly forced inwards by the ball. The preparation shows that the inner surface of the body of the bone is in a state of caries, and the ball, with part of the man's dress, is firmly impacted, projecting a little into the spinal canal. Died 10th day.—CUSACK, æt. 36. *M.S. Catalogue*, page 30. *Appendix*, page 30.

A. 16. Three vertebræ. A musket-ball entered the angle of the eleventh rib, and was cut out over the curvature of the ninth. It passed through the root of the spinous process of the last dorsal vertebra, driving a portion inwards, and carrying away the transverse and a portion of the infe-



rior oblique process. Died 6th day.—Got. *M.S. Catalogue, page 37. Appendix, page 34.*

A. 17. Three vertebræ, showing the diseased actions which supervene occasionally in the osseous structures of the vertebræ, when a gun-shot injury has been sustained in any part of the canal. No history.—*M.S. Catalogue, page 25.*

A. 18. Portion of a vertebra, showing how the processes and other portions are occasionally struck from the bodies of the vertebræ, by musket-shot, and the carious action that follows. No history.—*M.S. Catalogue, page 26.*

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#### INJURIES OF THE RIBS.

A. 58. Three examples of the manner in which the ribs are sometimes snapped directly across when struck by a ball.—*M.S. Catalogue, page 98.*

B. 8. Fracture of the 5th rib near its middle by a musket-ball which passed through the thorax.—*Presented by Dr Handyside.*

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#### INJURIES OF THE PELVIS.

A. 19. Os innominatum and upper part of the femur, 72 days after the reception of a gun-shot injury. The ball would seem to have struck the dorsum ilii, coursed between its plates, passing obliquely out near the sacro-ischiatic notch, injuring the superior portion of the acetabulum. The dorsum and venter ilii, the whole of the acetabulum, along with

the head of the femur, present marked appearances of absorption. Died 72d day.—QUIN. *M.S. Catalogue, page 44. Appendix, page 37.*

A. 20. Os innominatum and lateral half of the sacrum. The injury to the bone seems to be confined to an irregular circular space of about two inches immediately below and adjoining the junction of the sacrum with the ilium. A large sequestrum, with the ball at one end, is encased between the plates of the ilium, parts of which are lying dead on the surface. Callus has been thrown out round the edges of the wound. Died 151st day.—DOYLE, æt. 42.—*M.S. Catalogue, page 44. Appendix, page 38.*

A. 21. Lateral half of the sacrum and os innominatum of a soldier who died of tetanus. The ball has struck with great force, breaking across the posterior plate of the sacrum, and has been arrested in its course inwards by the denser structure behind.—WATSON. *M.S. Catalogue, page 43.*

#### INJURIES OF THE SUPERIOR EXTREMITY.

A. 57. Comminuted fracture of the right clavicle. Several fragments wanting. A fissure will be seen at the sternal extremity, but no callus effused. No history.—MURPHY. *M.S. Catalogue, page 95.*

B. 9. Fracture of the inferior margin of the scapula by a musket-ball which entered the thorax between the cartilages of the 6th and 7th ribs on the right side, made a breach in the diaphragm, and lacerated the subjacent portion of the liver; it then passed upwards, wounding slightly the three lobes of the lung on that side, particularly the middle one, fractured the 5th rib, B. 8., and made its way outwards

through the scapula. The patient, a soldier who committed suicide by pointing his musket to his breast, and pulling the trigger with his toe, survived the injury about 24 hours.—*Presented by Dr Handyside.*

A. 54. Lower third of the humerus, showing a beautiful specimen of splintering in the long bones from gunshot,—CAREY, æt. 26. *M.S. Catalogue, page 95.*

A. 55. Head and neck of the humerus which was separated from the shaft of the bone by a ball entering at the bicipital groove. A narrow tongue-shaped splinter of about two inches and a half long remains in connection with the head of the bone.—DUMBLE, æt. 35. *M.S. Catalogue, page 95.*

A. 56. Another preparation of gun-shot comminuted fracture of the humerus, in which the articular surface, entering into the formation of the joint, is retained in connection with the shaft by a part of the bone not more than a third of its normal thickness.—BUZZARD, æt. 20. *M.S. Catalogue, pages 95 and 97.*

A. 73. Humerus fractured and fissured by a ball which entered on the outer side of the right arm. The preparation presents a thin deposit behind the edges of circumvallation which the absorbents have distinctly marked. The callus is unnatural in its appearance, being composed of a smooth layer of pure phosphates. The limb was amputated on the 14th day on account of hemorrhage.—KINNAIRD, æt. 18. *M.S. Catalogue, page 132. Appendix, page 111.*

A. 75. Upper part of the humerus fractured just below its neck, with two fragments of considerable size. Little callus has been thrown out and little absorption has taken place. Died on the 35th day.—FOUNTAIN, æt. 30. *M.S. Catalogue, page 132. Appendix, page 113.*

A. 80. Bones of the hand and fore-arm amputated 223 days after receiving a gun-shot comminuted fracture of the radius. The ball is seen imbedded, but loose, in a case of

callus between the radius and ulna.—BROWN, æt. 45. *M.S. Catalogue, page 138. Appendix, page 121.*

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A. 42. Injury of the Shoulder-Joint.—Head of the humerus completely split by a musket-ball in two directions, one transversely nearly parallel to the junction of the epiphysis, and the other perpendicularly upwards through the articulating surface. Part of the shirt is seen carried in with the ball which is lodged. Died 11th day.—COLLINS, æt. 18. *M.S. Catalogue, page 86.*

A. 43. Fracture into the elbow-joint. A musket-ball entered from behind over the internal condyle, which is detached and splintered into several small pieces. The ball is seen impacted with part of the coat-sleeve adhering. Amputation was performed a few hours after reception of the injury. Died 20 days after.—MAHONEY, æt. 25. *M.S. Catalogue, page 87. Appendix, page 81.*

A. 34. Elbow-joint of a man, in which the ball passed obliquely through the external condyle, not perceptibly fissuring the bone, but leading to extensive caries and a complete bony ankylosis. Callus has been abundantly thrown out; and absorption has been active at the same time. The epiphyses of the humerus have been evidently detaching, and a thin external plate of the bone, up to the point of amputation, has in places scaled off. The limb was amputated on the 136th day.—WILLIAMS, æt. 23. *M.S. Catalogue, page 78. Appendix, page 64.*



## INJURIES OF THE INFERIOR EXTREMITY.

A. 44. Comminuted fracture at the lower third of the right femur, exhibiting in a very beautiful manner the long splitting and splintering of bones from gun-shot wounds. A large splinter of the bone is driven into the medullary canal. Primary amputation was had recourse to.—M'CORMICK. *M.S. Catalogue, page 94.*

A. 45. A specimen in every way analogous to the preceding, but remarkable, as showing that a fragment, which had apparently been completely detached, had lost all vitality although amputation was performed within five hours of the receipt of the wound.—CAPT. ——. *M.S. Catalogue, page 96.*

A. 46. Gun-shot comminuted fracture of the lower end of the femur, occasioned by a ball which entered on the inner aspect. One fragment is nearly seven inches in length.—BREARD, æt. 30. *M.S. Catalogue, page 96.*

A. 47. Lower half of a femur, remarkable both for the great space over which the fracture extends, and the numerous pieces into which it has been broken.—CRAWTHER, æt. 23. *M.S. Catalogue, page 96.*

A. 59. Two lower thirds of the femur of a man who died 35 days after receiving the injury. The ball struck obliquely at the side of the bone, fissuring it for several inches, and detaching several fragments. The line of circumvallation around the edges is very imperfect, and little callus has been thrown out. At the lower part of the bone there is a distinct line of separation.—SMITH. *M.S. Catalogue, page 122.*

A. 60. Remarkable specimen, in which the femur is fractured, but not at the point struck by the ball. The bone broke abruptly across, with scarcely any comminution, some distance below the wound in the thigh, where the ball was found in contact. The shaft of the bone presents a fissure

extending for more than six inches. The whole bone exhibits marks of active absorption, and at three points alone, close to the seat of fracture, is there any appearance of callus. Died 29th day.—HASSON, æt. 22. *M.S. Catalogue, pages 114 and 122.*

A. 61. Fracture of the femur at the union of the middle with the upper third of the bone. The preparation shows that callus is already abundantly thrown out, uniting at one point two fragments to the shaft. The unattached points of these fragments, and a long tongue-like process from the shaft, are marked all round by a distinct line of separation; they are, however, still perfectly firm. The lower shaft or portion of the femur is wanting. The man died on the 41st day, amputation having been performed 11 days previously.—CALLAGHAN, æt. 26. *M.S. Catalogue, page 123. Appendix, page 89.*

A. 63. Oblique and fissured fracture of the femur. Marks of a feeble attempt at detaching the ends and edges of the fractured bone may be seen. Scarcely any effort at deposition of callus has been made, the ulcerative and absorbent actions greatly predominating. Amputated on the 50th day.—OWEN, æt. 25. *M.S. Catalogue, page 125. Appendix, page 93.*

A. 64. This is a beautiful specimen of a complicated fracture of the femur, in which the reproductive process has been very elaborate. The two portions of the shaft touch but at a single point, and in both the contact is with dead bone. Three large, long, and irregularly shaped fragments, are all curiously wrought together, and to each shaft. Everywhere, from shafts and fragments, sharp ends and edges are separating, and absorption marks the line of separation. The formation of callus may next be observed, which seems to have gone hand in hand with the absorbent process, and with equal activity. Thus the shafts are united at points where they do not touch, connected by the fragments form-

ing a bridge, firmly bound by callus to each shaft. This bridge is formed by three irregular pieces of from four to six inches in length; two of the longest flung boldly across from shaft to shaft; the third, and smaller fragment, seems to have fallen in, and so, at its upper extremity, lies under the upper shaft and the arch of the rude bridge. Amputation was performed on the 53d day, and the man recovered.—HOFFMAN, æt. 27. *M.S. Catalogue, page 102. Appendix, page 97.*

A. 65. A case equally beautiful and almost identical with the preceding. A piece of the ball flattened lies in the wound. Amputation was successfully performed on the 136th day.—PURCELL, aged 23. *M.S. Catalogue, page 102. Appendix, page 99.*

A. 66. Another case of fracture of the femur at its upper third. The preparation shows that absorption has been active, and that all the old and dead bone has been removed with a slight exception. Callus has been thrown out everywhere around the edges of the bone, and has united slightly a very complicated fracture; consisting of three fragments and two shafts. The union is by no means firm, but all the different parts of the fracture are put together in a direct line and in a desirable position. Amputation was performed on the 76th day.—STEPHENS, æt. 19. *M.S. Catalogue, pages 116, 126. Appendix, page 101.*

A. 67. An oblique gunshot fracture of the upper third of the femur, around which callus has been irregularly effused. The commencement of the line of circumvallation is seen on both sides of the linea aspera. Amputated on the 77th day.—FORD, æt. 21. *M.S. Catalogue, page 129. Appendix, page 103.*

A. 68. Another oblique fracture of the femur, with a triangular sequestrum nearly detached. Callus is effused principally above the sequestrum. Died 44th day.—PARKER, æt. 23. *M.S. Catalogue, page 129.*

A. 69. A portion of the femur showing an oblique fracture, with an exfoliation, nearly detached, on the inner side. Callus has been but sparingly effused round the fractured edges. Name unknown. *M.S. Catalogue, page 99.*

A. 70. Oblique fracture of the femur at the junction of its upper and middle thirds; although at some points a large excess of callus is observed, still around the greater part, barely enough to connect the edges of the fractured bone, has been deposited. Died on the 84th day.—FOLLY, æt. 21. *M.S. Catalogue, page 99. Appendix, page 105.*

A. 71. An oblique fracture at the middle of the shaft of the femur, presenting marks of external disease. The absorbent process has been very active here, and little callus has been thrown out, except at one point on the inner side of the bone.—A Carlist prisoner. *M.S. Catalogue, page 113.*

A. 72. Lower third of the femur, where a musket-ball struck and was flattened by the force of the blow. The external wound healed, but the patient sunk on the 181st day under an irritative fever. The ball was found to have grazed the femur at its lower third, having passed obliquely through the rectus muscle and lodged between the bone and vastus externus muscle. A tubercle of exostosis is seen where the ball struck, and a large portion of the lower surface of the femur was extensively diseased. The periosteum was entirely gone, and the ball had formed a cavity which contained about half-an-ounce of black foetid matter, in the midst of which it was found.—MILLER, æt. 46. *M.S. Catalogue, page 130. Appendix, page 109.*

A. 48. Fracture of the tibia a little below the head of the bone. Several fragments project, and fissures are seen extending along the shaft. Amputated nine hours after receiving the injury.—MURRAY, æt. 32. *M.S. Catalogue, page 95.*

A. 49. Gunshot comminuted fracture of the tibia about its



middle, with numerous fragments.—SULLIVAN, æt. 23. *M.S. Catalogue, page 95.*

A. 50. Upper and middle part of the tibia very much shattered at its upper third by a ball passing through it from behind; in this case the fibula was fractured transversely at the lower third.—ALMY, æt. 37. *M.S. Catalogue, page 97.*

A. 51. Lower half of the tibia very much splintered above the malleolus from a gun-shot wound.—FLEMING, æt. 28. *M.S. Catalogue, page 95.*

A. 52. Portions of the tibia and fibula much shattered from a gun-shot wound. Many of the fragments are wanting.—HUSS. *M.S. Catalogue, page 97.*

A. 53. Portion of the tibia much fractured, showing how the shaft of a bone may be splintered through three parts of the circumference without being completely separated at that point.—CAREY, æt. 26. *M.S. Catalogue, page 95.*

A. 76. A round shot struck the right leg about six inches above the external malleolus over the outer edge of the tibia. The bone presents a very complicated fracture in its outline, although it only consists of two shafts and two perfectly detached fragments. There is a slight deposition of callus around the fracture in both shafts, and the bone is more or less roughened down to the ankle-joint and as high as it was amputated, close below the knee. Various lines of demarcation may be traced. Little displacement occurred during the treatment, which may be accounted for by the remarkable manner in which the fragments are dovetailed. Amputation was performed on the 19th day.—ATKINS, æt. 42. *M.S. Catalogue, page 134. Appendix, page 115.*

A. 77. Portion of the tibia of a man who received a ball into the substance of the bone without fracture. Callus has been principally effused on the posterior aspect. The ap-

pearances presented by this preparation correspond remarkably with the following.—GIBSON. *M.S. Catalogue*, page 135.

A. 78. Portion of a tibia. The ball buried itself deeply in the substance of the bone to its inner aspect without fracturing it across, or even deeply fissuring it. Much callus has been thrown out, and a portion of dead bone is seen lying in the cavity. Died 35th day.—WILLIAMS, æt. 23. *M.S. Catalogue*, page 136. *Appendix*, page 117.

A. 79. Tibia and fibula amputated on the 35th day after receipt of a gun-shot wound. The tibia presents a very comminuted and complicated fracture, and throughout its extent is deeply worm-eaten and furrowed by the absorbents, only here and there varied by some feeble and abortive efforts at the deposition of callus. Some attempt has been made to mark a line of separation, and to throw off the sharp ends of the fractured bone. The whole of the fibula is slightly eroded and roughened.—MATHIESON, æt. 29. *M.S. Catalogue*, page 136. *Appendix*, page 119.

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A. 62. Acetabulum and upper third of the femur of a man in whom a ball had passed through the bone at the junction of the neck with the shaft, opening the capsular ligament. In the preparation, the absorbent process is seen to have been the most active, little callus being thrown out. Some may, however, be traced within the insertion of the capsular ligament. Died on the 47th day.—EVANS, æt. 23. *M.S. Catalogue*, page 123. *Appendix*, page 91.

A. 24. Presents a fractured patella. A musket-ball struck its external edge; the wound was immediately followed by much pain and swelling of the joint. The man walked a mile after receiving the injury; he was otherwise severely

injured on the chest and neck. The cartilaginous covering of the bones was ulcerated and absorbed.—MURPHY. *M.S. Catalogue, page 58. Appendix, page 46.*

A. 22. Bones entering into the formation of the knee-joint. A musket-ball entered on the outside, about an inch below the knee; coursed upwards and inwards, grating the head of the tibia at the posterior surface, and emerged opposite the inner condyle of the femur. The whole of the articulating surfaces of the bones forming this preparation are in a state of caries. Died 48th day.—Dwyer, æt. 22. *M.S. Catalogue, page 56. Appendix, page 42.*

A. 23. Bones forming the knee-joint, showing the worst consequences of penetrating wounds into joints with abrasion or contusion of the articulating surfaces. The bones at their articulation are very much absorbed. Died 29th day.—DALY. *M.S. Catalogue, page 56.*

A. 25. Knee-joint of a man who received a wound from a musket-ball, entering at the outer edge of the patella, penetrating the capsular ligament, and lodging in the head of the tibia. Amputation was performed on the 8th day. The joint, it will be seen, had not suffered materially; a small point only is observable on each condyle, where the cartilage has been absorbed. A probe is passed in the track of the wound.—ALISON. *M.S. Catalogue, page 59. Appendix, page 49.*

A. 26. Knee-joint, showing the unfavourable course of a joint directly injured with complication of fracture and fissures through the articulating surfaces, in a debilitated constitution. A musket-ball entered the upper part of the calf of the leg, half an inch from the border of the popliteal space, and coursed outwards and forwards, lodging under the integuments over the head of the tibia, whence it was extracted. The head of that bone is seen fissured, and the cartilages absorbed and gangrened. Died 27th day.—WAITE. *M.S. Catalogue, page 62. Appendix, page 53.*

A. 27. A case somewhat similar to the last. The ball was found to have entered near to the head of the fibula, which it had shattered, and penetrating the capsule of the joint, injured the inner side of the head of the tibia, coursing round the internal edge of the bone, it again shattered the posterior edge of its articulating surface, portions of which were found separated. Died 10th day.—CAREY, æt. 40. *M.S. Catalogue, page 63. Appendix, page 51.* \*

A. 28. Lower third of the femur, illustrating the close fissure which frequently results from a gun-shot fracture. In this case it extends into the knee-joint. The ball had entered at the posterior aspect, immediately above the external condyle, which was much comminuted. Primary amputation was resorted to.—BLACK, æt. 24. *M.S. Catalogue, page 66.*

A. 29. This preparation shows a fracture of the tibia and fibula about three inches above their articulation with the tarsus. The fibula is simply fractured across, and has been slightly united in its overlapped position; from it there seem to have been no exfoliations. The whole of the bone preserved shows marks of partial absorption, with but little deposition of callus. The tibia presents great loss of substance, forming a large cavity about three inches in length, and extending across the whole breadth of the bone, leaving it a shell of two unequal sides. Marks of active absorption are seen within. One fissure at the lower extremity extends through, and obliquely across, the articulating surface of the tibia, but no marks of absorption are seen at this point. Died 99th day.—CURRY, æt. 40. *M.S. Catalogue, page 70. Appendix, page 54.*

A. 30. A musket-ball passed, as the preparation shows, directly through the head of the tibia from behind forwards, carrying in with it a portion of the outer table of the bone. An irregular fissure is seen extending across the whole of one of the articulating surfaces, and another extending from the



shot-hole for about two inches; callus has been deposited scantily along its edges. A large portion of carious cancellated tissue is seen in the track of the ball, as if separating, at the time of death, from the more healthy structure. Died 48th day.—WEST, æt. 37. *M.S. Catalogue, page 73. Appendix, page 58.*

A. 31. Bones entering into the formation of the knee-joint, and part of the fibula. A musket-ball entered at the front of the tibia, on its inner aspect, and came out through the head of the fibula. The former is fractured in several directions down the shaft and upwards through the articulating surface, which is greatly absorbed, with little mark of deposition of callus. All the articulating surfaces present at various points marks of active absorption. The fibula is unaltered, except at its head, where evident marks of the absorbent action remain in the form of a thin shell of bone. Amputated 27th day.—CASEY. *M.S. Catalogue, page 74. Appendix, page 62.*

A. 32. Upper part of the tibia presenting appearances very similar to those of the last. The bullet penetrated the capsule of the knee-joint, a little above the tuberosity of the tibia, and at the side of the ligamentum patellæ, entering the head of the bone close to its articulating surface; and passing obliquely backwards and downwards, it emerged at a lower level than where it entered. The bone is fissured through the whole breadth of the articulating surface, which is in a carious condition. Died 34th day.—M'COY, æt. 41. *M.S. Catalogue, page 77. Appendix, page 63.*

A. 33. Upper third of the tibia, presenting a case almost identical with the preceding. Fissures are seen on both aspects of the shaft. Primary amputation was performed.—DENT, æt. 23. *M.S. Catalogue, page 78.*

A. 35. Lower third of the femur, exhibiting the passage of a ball through the inner condyle, in a line with its longest axis.

The bone at this point is much crumbled, and presents several detached fragments. Amputated on the 25th day.—HAGLAND, æt. 45. *M.S. Catalogue, page 81. Appendix, page 70.*

A. 36. Knee-joint, illustrating the results of a rough and foreign body projecting between the articulating surfaces of a large joint. At the inner side about the centre and an eighth of an inch to the side of the patella, is an elliptical opening showing the entrance of the ball through the ligamentous structure. This opening is traversed obliquely by a ligamentous fibre, which accounts for no opening in the joint having been detected during treatment. The ball is seen partially buried in the substance of the bone immediately above the articulating surface of the internal condyle. Great part of the articulating surfaces of the bones are carious and absorbed. Died 27th day.—MACKENZIE, æt. 18. *M.S. Catalogue, page 82. Appendix, page 72.*

A. 37. Comminuted fracture of the internal condyle of the femur, implicating the articulating surface. The ball is seen lodged in the cancellated texture of the condyle. Primary amputation.—HOLDING, æt. 18. *M.S. Catalogue, page 85. Appendix, page 76.*

A. 38. Lower third of the femur, showing a musket-ball lodged a little above the external condyle, just at the junction of the epiphysis with the shaft of the bone. The fracture extends to the edge of the articulating surface. Primary amputation.—A Spaniard. *M.S. Catalogue, page 85.*

A. 39. Upper portion of the tibia of a patient, showing a musket-ball lodged in the head of the bone in front of the spine. There seems to have been no great fracture, but several slight fissures extend into the articulating surface of the bone. Amputation was performed 18 hours after receipt of the injury.—M'CORMACK, æt. 24. *M.S. Catalogue, page 85. Appendix, page 77.*

A. 40. Gun-shot comminuted fracture of the inner condyle of the femur, in which the ball is buried. The articulating surface is fissured across to its centre; and the whole of the condyle is in a state of caries. Amputated on the 21st day.—HOLLS, æt. 24. *M.S. Catalogue, page 86. Appendix, page 79.*

A. 41. Fracture of the upper portion of the patella by a ball which lodged in the external condyle of the femur, where it is seen in the preparation. Died 8th day.—JACKSON, æt. 23. *M.S. Catalogue, page 86.*

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#### EFFECTS OF AMPUTATION ON THE BONES SAWN ACROSS.

A. 74. Preparation showing disease of an amputated humerus. The bone, which was found to be denuded of periosteum for two inches above the point of amputation, presents a distinct line of separation with exfoliation. On the external aspect the bone is carious, on the internal unhealthy-looking callus has been effused. Died 21st day.—DEVAL, æt. 48. *M.S. Catalogue, page 143. Appendix, page 123.*

A. 81. This is a portion of the femur, removed on the 15th day after primary amputation of the thigh from an unfavourable case. A fungoid tumour is seen projecting from the medullary canal of the sawn end of the bone. The periosteum was found separated in an irregular and narrow circle from the extreme edge of the bone; immediately above, thickened and cartilaginous, in which ossific matter had been rapidly depositing. Died on the 18th day.—ROOKE, æt. 26. *M.S. Catalogue, page 146. Appendix, page 127.*

A. 82. Portion of the extremity of the femur of a man, which was amputated for a severe comminuted fracture a

little below the knee-joint. The preparation shows the marks of extensive absorption, but little deposition of callus. The bone was found denuded of periosteum for two inches above the sawn extremity. Died 21st day.—FLEMING, æt. 28. *M.S. Catalogue, page 144. Appendix, page 126.*

A. 83. A case somewhat similar. The bone is denuded of periosteum for a short distance from the sawn end. Died 21st day.—LOPE, æt. 18. *M.S. Catalogue, page 141. Appendix, page 136.*

A. 84. Portions of the radius and ulna of a man who underwent primary amputation below the elbow. The end of the radius is diseased, the ulna is sound. Died 23d day.—PALMER, æt. 25. *M.S. Catalogue, page 141. Appendix, page 138.*

A. 85. Portion of the sawn end of the femur which was amputated for compound fracture of the tibia and fibula. The stump was soundly healed, and the bone, which was rounded by callus, showed a faint line of separation. Died 23d day.—ALMY, æt. 37. *M.S. Catalogue, page 141. Appendix, page 140.*

A. 86. Portion of the humerus which was amputated primarily for comminuted fracture. The stump presents a line of separation with slight effusion of callus. Some exfoliation is also seen at the sawn end of the bone. Died 24th day.—CRENAY. *M.S. Catalogue, page 141. Appendix, page 142.*

A. 87. Portion of the sawn end of the femur of a man who underwent primary amputation, and died on the 32d day from irritative fever and phlebitis. The stump had adhered in the line of incision with the exception of two fistulous openings, communicating with the bone, which was denuded of periosteum at its extremity, and in patches to the extent of from four to five inches.—SIMPKIN, æt. 35. *M.S. Catalogue, page 141. Appendix, page 144.*

A. 88. A case somewhat similar. The bone protruded



more than an inch from the stump. One third of this was completely uncovered; immediately above which a thickish ring of callus had formed and extended about an inch upwards. Almost the whole thickness of the bone appears to be detaching as a sequestrum. Died 30th day.—VISANDO, æt. 18. *M.S. Catalogue, page 141. Appendix, page 146.*

A. 89. Preparation of a femur which was amputated at its lower third for gun-shot fracture of the tibia. Nearly the whole of the shaft of the bone, from an inch below the trochanter minor down to the extremity, a length of 8 inches, is enveloped in a rough and irregular sheath of callus, thickening towards the lower extremity. At this end may be observed the circular extremity sawn across, scarcely altered. Died on the 122d day.—COOPER, æt. 23. *M.S. Catalogue, page 146. Appendix, page 129.*

A. 90. An irregularly cylindrical shell of bone, upwards of 4 inches in length, which came away on the 152d day after primary amputation. The lower end is formed by the sawn extremity of the femur, unaltered in figure and texture. Active absorption of the remainder is evident within and without in the rough and elaborately worked surface of the bone, which resembles more a Chinese ornament than a pathological production.—SMITH, æt. 21. *M.S. Catalogue, page 147. Appendix, page 131.*

## EXFOLIATIONS, FRAGMENTS, EXOSTOSES, &amp;c.

A. 91. Piece of lead and portion of bone removed five months after receiving a gun-shot wound which fractured the inferior maxilla, lacerating the tongue and sublingual and submaxillary arteries. The man recovered.—ELLINGTON, æt. 28. *M.S. Catalogue, page 153. Appendix, page 148.*

A. 92. Two portions of exfoliated bone. The smaller was furnished by a case of gun-shot fracture of the humerus, treated successfully, and from which 16 pieces of bone separated. The source of the larger portion is doubtful, it does not probably belong to the same patient.—ANDERSON, æt. 21. *M.S. Catalogue, page 153. Appendix, page 152.*

A. 93. Three portions of exfoliated bone, the larger being evidently a portion of newly formed callus. No history is attached to them.—*M.S. Catalogue, page 153.*

A. 94. Four pieces of exfoliated bone, following fracture of the leg. The ulcerative action of the absorbents may be traced in the rough furrows on the outer surface of these portions.—OWEN, æt. 30.\* *M.S. Catalogue, page 154.*

A. 95. Fragments of fractured bone; five are exfoliations; five are fragments with some slight deposition of callus on them. No history.—*M.S. Catalogue, page 155.*

B. 10. Exfoliation from the outer plate of the parietal bone.—RENNY.

B. 11. Disc of bone removed by the trepan from the head of Captain C——t of the Royal Navy. A small circle of bone within the area of the trepan may be observed in the progress of exfoliation. The patient, after a fall on the occiput, had lain for several days in a state of partial stupor, with a pulse at 32; he obtained no relief from the operation, and died in a few days thereafter. No dissection.

B. 12. Two fragments removed from the parietal bone of the patient who furnished preparation B. 7.

B. 13. A beautiful specimen of exostosis from the lower extremity of the radius. An opening may be seen through which the flexor tendons passed to the fingers. The arm was amputated, and the preparation *presented by Alexander Christie, Esq., Surgeon, Bengal Army.*

B. 14. Effects of a gun-shot wound in the tusk of the Elephant. The shot-hole has not cicatrized, but a mass of ir-

regular ivory has filled the upper part of it. The cement has been applied to the edges of the wound, so as to round them off, and render them irregular.

B. 15. Section of an Elephant's tusk. In this preparation, the ball is seen *in situ*, with a great excess of callus or ossific matter exuded around it.

B. 16. Another section of an Elephant's tusk. Here a pouch has apparently been formed by the callus for the lodgement of the ball. This pouch is cut through in the section.

These preparations, B. 14, 15, 16, are noticed in a valuable paper in the Transactions of the Royal Society of Edinburgh, vol. xv., page 93, by John Goodsir, Esq., M.W.S. *Presented by the late Sir John Robison.*

## INJURIES OF THE BRAIN AND NERVES.

A. 108. Portion of the cerebellum of the patient who furnished preparation A. 10, containing tubercles, and showing the ulcerative process which follows injuries to the cerebral structure. A ball A. 120 had lodged in the cerebrum, and was removed on dissection. Died 27th day.—COLE, æt. 30. *M.S. Catalogue, page 164. Appendix, page 12.*

A. 121. This preparation is a remarkable specimen of a tubercular state of the cerebellum in a boy, which apparently had existed for years, and ultimately led to his death.—C——, æt. 12. *Appendix, page 166.*

A. 101. This preparation shows the bulbous extremities of the anterior tibial nerve, lacerated and exposed in a gunshot wound, occasioning the patient to scream when any one walked across the ward in which he lay. The largest and smallest portions were cut off successively, and after the

removal of the latter, permanent relief was afforded.—*M.S. Catalogue, page 160.*

B. 17. Beautiful specimen of the neuromata, or bulbous swellings forming on the extremities of nerves cut across in amputation. *Presented by Dr Duncan.*

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#### INJURIES OF THE THORACIC AND ABDOMINAL VISCERA.

B. 18. Bayonet wound of the left ventricle of the heart. The man was 23 years of age; was stabbed by a sentry in Dublin, on the 24th December 1837, and died in a few minutes. The heart is injected, and shows the wound, which is about an inch and a half in extent, transversely, a little above the apex.—*Presented by Staff-Surgeon Home, formerly of the 2d Dragoon Guards.*

A. 98. Shows the thickening of the pleura pulmonalis, which resulted from the inflammatory action set up in a man who died on the 10th day, after receiving a penetrating gun-shot wound of the chest.—*West, æt. 29. M.S. Catalogue, page 157.*

A. 96. Shows a ball lodged in a sac formed by the omentum. The man died, on the 2d day, of peritoneal inflammation.—*Cooper, æt. 19. M.S. Catalogue, page 158. Appendix, page 156.*

A. 97. Small portion of the liver of a man who died from concussion of the brain, showing the cicatrix of an abscess which had formerly existed.—*Morton. M.S. Catalogue, page 159.*

A. 100. Small portion of liver taken from the patient who furnished preparation A. 78, showing the pyrogenic membrane of an abscess. Several of a similar character were



found both in the lungs and liver. Died 35th day.—  
WILLIAMS, æt. 23. *M.S. Catalogue, page 159. Appendix, page 117.*

A. 99. Shows a part of the sigmoid flexure of the colon, exposing the circular wound made by a bullet. Not the slightest attempt at closing or adhesion had taken place. Died 5th day.—BELL, æt. 35. *M.S. Catalogue, page 159. Appendix, page 160.*

B. 19. Portion of the stomach of a young lady who committed suicide by swallowing bent pins. No treatment was attempted. Several of the pins are seen with the preparation. They, as well as the stomach, are quite encrusted with acetate of copper. *Presented by J. Burns, Esq., Surgeon, Royal Navy.*

## INJURIES OF THE BLOOD-VESSELS.

A. 103. Preparation showing sloughing of the brachial artery, caused by a gun-shot wound of the arm; the ball A. 118 fracturing the humerus, and bruising the artery in its course. Amputated 13th day.—CAREY, æt. 24. *M.S. Catalogue, page 161. Appendix, page 162.*

A. 102. Shows a lesion of the ulnar artery, half-an-inch below its bifurcation. Secondary amputation was performed on account of fracture of the radius.—WILSON, æt. 35. *M.S. Catalogue, page 162.*

A. 105. Portion of the femoral artery of a patient who died 20 days after amputation of the thigh. The stump was well healed, and this preparation illustrates the action of the plug in arresting hæmorrhage.—LOPE, æt. 20. *M.S. Catalogue, page 161. Appendix, page 136.*

A. 104. Two portions of the femoral vein altered by inflammation.—DARBY. *M.S. Catalogue, page 156.*

A. 106. Shows two portions of the femoral vein altered in structure by inflammation. It was lined by a thick coating of lymph, as far as Poupart's ligament, and contained pus mixed with sanious matter. Amputation was performed below the tuberosity, for gun-shot fracture. Died 19th day. See A. 52.—SLUGG, æt. 29. *M.S. Catalogue, page 102. Appendix, page 164.*

## WORMS.

A. 107. A large tape worm, *Tænia Solium*, expelled from a patient, A. 33, who underwent primary amputation of the thigh. This worm did not influence the healing process, giving rise to no symptoms during treatment.

B. 20. Specimen of the *Filaria Medinensis*, or Guinea-worm, extracted from his own leg, and *presented by A. Graham, Esq. Surgeon, Bombay Army.*

B. 21. Another specimen of the Guinea worm, extracted from the leg of a soldier of the 65th regiment, in Edinburgh Castle, after his return from Bombay.—*Presented by the late Staff-Surgeon, O'Reilly, formerly of the 65th.*

B. 22. Another specimen of the Guinea worm, extracted from the leg of a soldier of the 4th Dragoons, at Canterbury, after his return from Bombay.—*Presented by Dr Pitcairn, Surgeon, 49th regiment.*

B. 23. Another specimen of the Guinea worm, extracted from the breast of an African negress, between the mammæ.—*Presented by Dr M<sup>r</sup> William, Royal Navy.*

## CASTS.

B. 25. Cast from the skull of a well known character, chief of a considerable tribe to the northward of Sidney; in which the whole upper part of the skull, more particularly the frontal and parietal bones, are disfigured by deep and extensive exfoliations, the result of blows received from the *waddies*, or heavy bludgeons, with which the natives of that country fight.—See “Edinburgh Medical and Surgical Journal, vol. lvii. page 120.”—“Ballingall’s Outlines of Military Surgery, page 262.” Second Edition. *Presented by J. Drummond, Esq., Surgeon, Royal Navy.*

B. 25. Cast of the face of Alphonze Louis, the “Gunner with the silver mask,” who had the whole of his lower jaw carried away, and his right forearm severely injured, by the fragment of a shell at the last siege of Antwerp, and for whom the very ingenious contrivance, B. 81. was invented. For a detail of the case, see “London Medical Gazette, vol. xii,” “Edinburgh Medical and Surgical Journal, vol. lvii. page 120,” and “Ballingall’s Military Surgery, page 280,” Second Edition. *Presented by Robert Nasmyth, Esq.*

B. 26. Cast of a head very much distorted towards the left side by an enormous tumour of the antrum, which was removed by Mr Liston.—See a paper on tumours in the “Medico-Chirurgical Transactions, vol. xx. page 186.” *Presented by Robert Liston, Esq.*

B. 27. Cast of the right side of the face of a man much disfigured by an osteo-sarcomatous tumour of the antrum, removed by Sir George Ballingall.—“Clinical Lectures, No. ii. page 21.”

B. 28. Cast of the head of a man with an immense osteo-sarcomatous tumour of the lower jaw, removed by Mr Syme.

—See “Edinburgh Medical and Surgical Journal, vol. xxx. page 286.” *Presented by Professor Syme.*

B. 29. Cast of the lower part of the abdomen, showing a diffuse tumour in the hypogastric region, arising from a varicose state of the epigastric veins.

B. 30. Cast of a ball, encrusted with calculous matter, extracted from the bladder of Mr C——e of Dublin, in which it had been lodged by a gun-shot wound, inflicted by an assassin.

B. 31. Cast of the perineum of a woman, showing a high state of congestion in the parts of generation, with syphilitic warty vegetations, or condylomata round the anus.

B. 32. Cast of the perineum in a female with syphilitic condylomota.

B. 33. Cast of the perineum of a man with a warty grape-like tumour in the left groin, an abscess in perineo, and a number of hemorrhoids around the anus.

B. 34. Cast of the left inferior extremity of a man, presenting a large swelling on the inner side of the thigh, a little above the knee, and a varicose state of the veins both above and below the site of the principal tumour. A case of aneurismal varix from a wound by a carpenter's chisel. “Liston's Elements of Surgery, first edition, page 676.”—*Presented by Mr Liston.*

B. 35. Cast of the stump of a foot, in which amputation was performed at the junction of the toes with the metatarsal bones.—*Presented by Dr Duncan.*

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#### BALLS, MISSILES, &c.

A. 109. Is a fragment of a shell, which entered into the orbit of a patient, A. 12. and passing through its floor, tra-



versed obliquely downwards and backwards towards the opposite side of the neck, where it was found lying over the site of the carotid artery, and extracted the day after the action. *M.S. Catalogue, page 168.*

A. 110 to 120. Are a series of musket-balls, illustrative of different facts with regard to their appearance after having been fired.—*M.S. Catalogue, pages 165 to 168.*

A. 110, 111. Show that balls may occasionally be split in two or more parts, which are propelled in different directions.

A. 112. Shows the information that may occasionally be derived from attending to the figure and state of the ball. In this case it was a question whether it had passed through the thorax, or swerved round the rib. The flattened and grooved appearance of the ball, with particles of bone ground into its irregularities, indicated that the latter was the case.—*EWING. Appendix, page 169.*

A. 115. Exemplifies the violence which balls often occasion to the structures about the jaw, sometimes, as in this instance, carrying away, firmly imbedded, portions of the alveolar process, and even portions of the teeth.

A. 116. Sufficiently attests, by its flattened condition, the violence with which it must have struck the bone; the femur. *MILLER. Appendix, page 109.*

A. 119. Shows how fractured portions of bone may be locked by means of the raised and jagged edges of the ball.—*WISE. Appendix, page 4.*

The rest of these balls show, that after having struck bones, they may be the means of inflicting the most complicated and lacerated wounds on any soft parts through which they may subsequently pass.

B. 36, 37. Balls altered in their figure by impinging against bones or hard substances, some from Badajos, *presented by Dr Thomson*, and some that were fired in the mutiny of the

2d W. I. Regiment, at Trinidad, in 1837, *presented by the late Alex. Campbell, Esq., Assistant Surgeon, 2d W. I. Regiment.*

B. 38, 39. Specimens of cannon balls, three and six pound shot. *Presented by the late Dr M'Intosh of the Royal Artillery.*

B. 40. Specimen of a grape shot, *presented by Dr M'Intosh.*

B. 41. Specimen of a canister or case shot, *presented by Dr M'Intosh.*

B. 42. Model of a grape shot made with musket balls, *presented by Colonel Gordon of the Royal Artillery.*

B. 43. Specimen of a Shrapnell shell, *presented by Colonel Gordon.*

B. 44, 45, 46, 47. Specimens of cannon and grape shot manufactured by the natives of India, and used at the last siege of Bhurtpore, under Lord Combermere. *Presented by F. Siewwright, Esq. M.D., Surgeon to the Forces.*

B. 48, 49. Specimen of a hand grenade, and specimens of percussion balls. *Presented by Mr O'Brien, a pupil of the class.*

B. 50. Breech of a gun, and screw-nail attaching it to the stock, which was lodged for seven or eight years in the head of Lieutenant Fritz of the Ceylon Regiment. The piece burst, and the breech entered the forehead between the eyebrows, lodged in the region of the nares, and projected partly through the palate. This is a *fac simile*, in bronze, made by Mr Nasmyth from the article in the possession of Colonel Firth, formerly of the 58th Regiment, by whom it was kindly lent for the purpose. See "Edinburgh Medical and Surgical Journal, vol. lvii. page 119," "Ballingall's Outlines of Military Surgery, page 279," 2d Edition. *Presented by Robert Nasmyth, Esq.*

B. 51. An arrow head extracted from the right antrum maxillare of a sepoy of the 50th Regiment N. I., on the 10th of January 1832. This arrow stuck in the antrum most firmly, and after the wound being enlarged, it was extracted by main force by Commissioner Captain W——, who is a powerful

man. Dr Tytler and Assistant Surgeon Griffiths had previously pulled at the arrow with all their force, and had loosened it, but had not strength to pull it out. *Presented by Dr Tytler, Bengal Army.*

B. 52. One of the lances in use in the British army. The shaft has been cut short, and the head shews the quadrangular wound such instruments are calculated to inflict. *Presented by A. Colclough, Esq., formerly Surgeon of the 9th Lancers.*

B. 53. An *Assaghai*, a weapon used with great dexterity by the natives of the Cape of Good Hope. It is about five feet long; with an elastic wooden shaft and a head of iron about a foot and a half long, which terminates in a flattened spear point. *Presented by Dr Dempster, Medical Staff.*

B. 54, 55, 56, 57, 58, 59. Arrows used by some of the natives in the service of the Rajah of Coorg, during the attack made upon his capital in 1834, by the troops under Major-General Sir D. Foulis, showing the kinds of wounds which they are calculated to inflict. *Presented by Sir David Foulis.*

B. 60. A Malay Dirk in a red varnished wooden sheath. Said to be poisoned. *Presented by the late Mrs Meikle.*

B. 61. A large war club, used by some of the South Sea Islanders. *Presented by Mr Kirkwood, a pupil of the class.*

B. 62, 63, 64, 65, 66. A hatchet, a battle-axe, a bow, and two spears, used by some savage tribes; the histories and donors of which are imperfectly known.

#### INSTRUMENTS, APPARATUS, MODELS, &c.

B. 67. *Andrometer*, or man-measurer. The invention of Mr James M'Donald, tailor in Edinburgh. This instrument

was contrived with a view to the more economical cutting of the soldier's clothing; but is applicable to other, perhaps more important military purposes,—the admeasurement of recruits; and the identification of deserters, or of prisoners who may have escaped from justice. See a report on this instrument by Deputy-Inspector Marshall, and the late Staff-surgeon Badenach, in “the United Service Journal, Dec. 1835;” and also a manuscript report by Sir G. Ballingall, made at the request of the Lord Provost and Magistrates of Edinburgh, in October 1841. *Presented by Mr M'Donald.*

B. 68. Model of a chair used in Portsmouth dock-yard, for carrying hurt artificers from the Surgery to their respective residences. The model is on the scale of 2 inches to the foot. *Presented by D. Cowen, Esq., Royal Navy, formerly Surgeon to the dock-yard at Portsmouth.*

B. 69. Model of the Bearer figured in the frontispiece to Dr Millingen's Army Medical Officer's Manual. This is quite akin to the *Branchard* described in the Dictionnaire des Sciences Médicales. See “Millingen's Army Med. Officer's Manual,” page 16; and “Ballingall's Military Surgery,” p. 89. 2d Ed.

B. 70. Model of a Dhooly, which consists of a light framework of wood, somewhat in the shape of a tent bed, covered in by painted canvass, and supported by a bamboo passing through its upper part.

B. 71. Model of the Dhooly used in the Madras Army, which is much the same as the preceding, with the advantage of one of the uprights being moveable so as to allow more easy access to the patient. *Presented by J. Hogg, Esq., formerly Surgeon of the 74th regiment.*

B. 72. Model of the Dhooly used in the Bengal Army. This has the advantage of being easily taken to pieces. The frame-work consists of a species of bed with a corded bottom. From its upper and lower ends rise two posts which meet



at an angle, and are joined above by an iron ring through which the pole for carrying the dhooly passes. On the top of this is fixed a painted canvass covering. The matrass, pillows, &c. are within. *Presented by Dr Dempster, Surgeon, 21st regiment, Royal North British Fusileers.*

B. 73. Model of the small-sized *Voiture*, recommended by Baron Larrey. The advantage in this ease consists in the floor of the carriage being moveable, and provided with four iron handles sunk in the frame, destined to receive the belts of the soldiers in order to carry the wounded; otherwise these vehicles were like ordinary spring waggons. They were drawn by two horses, and were 32 inches wide internally. See "*Larrey's Campaigns*, vol. i. page 154," and "*Ballingall's Military Surgery*, page 91." 2d Ed.

B. 74. Model of *Mr Cherry's cart*. This is on the scale of 3 inches to the foot. It consists of a light single-horse cart so constructed as to be readily adapted to all military purposes, either to the conveyance of wounded men, or to the carriage of stores, provisions, or forage. For these different purposes, a great part of the frame-work of the cart is moveable, and capable of being adjusted to the object required. The most ingenious part of the contrivance is that by which the cart can be converted into a spring carriage, by means of two moveable blocks sliding along the axle-tree, and moved by a lever attached to them. See "*Cherry's Observations on Army Transport*," and "*Ballingall's Military Surgery*, page 93." 2d Ed. *Presented by F. Cherry, Esq., Principal Veterinary Surgeon to the Army.*

B. 75. Model of an apparatus for treating fractured legs in a suspended position, used in some of the Continental Hospitals. *Presented by Dr J. Russell.*

B. 76. Model of a double-inclined plane for suspending fractured limbs. The invention of one of the Surgeons of



the Canterbury Hospital. *Presented by the late J. Young, Esq., Surgeon in London.*

B. 77, 78, 79, 80. Different kinds of splints for fractured limbs.

B. 81. Model of the ingenious contrivance made to supply the loss of parts to the "Gunner with the silver mask." B. 25. *Presented by Robert Nasmyth, Esq.*

B. 82. Tin mask for the face, so contrived as to prevent the patient's access to his eyes in cases of artificial ophthalmia. Made under the direction of the late Henry Marshall, Esq., of the 7th Dragoon Guards, and used with success in the army. See "Ballingall's Military Surgery, page 531." 2d Ed.

B. 83. Wooden box, for locking up the leg in cases of artificial ulcers, used in the Naval Hospital at Deal, as a punishment for impostors. *Presented by the late Alex. Copland Hutchison, Esq., Royal Navy.*

B. 84. Cat o'nine tails used in the British Army. *Presented by Dr. Winterscale, Surgeon of the Scots Greys.*

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DRAWINGS, PLANS, &c.

B. 85. Drawing of Millingen's Bearer, by one of the pupils of the class.

B. 86. Plate and description of Col. Crichton's Bearer. It consists of a piece of frame-work, borne upon two poles, supporting a tilted cover, and having a small cot or hung bed suspended from it, in which the patient is placed. See "Edin. Med. and Surg. Journal, vol. i. page 252." *Presented by the late Dr A. Duncan.*

B. 87. Copy of a drawing by Sir Charles Bell, of a frac-

ture of the skull, and of a wound of the arm from a bullet, at the battle of Waterloo. *Copied and presented by Mr J. J. Bowie, a pupil of the class, 1839.*

B. 88. Drawing of wounds of the head after Sir C. Bell. *Copied and presented by Mr J. J. Bowie, 1839.*

B. 89. Drawings illustrative of the case of Lieut. Fritz, B. 50. *Presented by J. Young, Esq., Surgeon, 19th regiment.*

B. 90. Drawing of the elevation of the Naval Hospital, Port-Royal, Jamaica. *Presented by George Burn, Esq., Surgeon, Royal Navy.*

B. 91. Plan of the Barrack Hospital at Greenlaw, near Pennicuick, similar in construction to those generally in use in this country during the late war.

B. 92. Quarto volume, containing 176 manuscript sketches of remarkable wounds received at Waterloo. These sketches were very kindly presented by Dr Thomson to Sir George Ballingall, by whom they have been arranged, classified, and bound up; and are bequeathed to the University, for the use of his successors in office, as an interesting and instructive record of the most extensive field presented in modern times for the exercise of military surgery.

B. 93. Another quarto volume, containing manuscript Reports, Cases, and Returns of the Wounded at Waterloo, presented by Dr Thomson to Sir George Ballingall, and bequeathed by him to the University.

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*A considerable collection of Plates, Drawings, Tables, &c., used in the illustration of the course, not numbered.*

